

REMARKS

As noted in the pending claims, Applicants have discovered that organic reactions that proceed by basic catalysis can be conducted in water in the absence of a basic catalyst if the water is supercritical, or subcritical at at least 350°C. An, the applied reference, teaches only that hot water (up to 300°C) can be used as a reaction media, but even then, when used for, e.g., a Cannizzaro reaction, the traditional basic catalyst NaOH must be added.

An abstract and page 2506, col. 1, lines 16-18, clearly indicates that An only contemplates the use of an aqueous environment at a temperature of up to 300°C. This is confirmed by reference to Table 1 of An, entry 18, which indicates a temperature of 298°C. Table 1 also confirms that where a basic catalyst is typically used for reaction, it is also used in An. Notice especially entry No. 36 in Table 1 of An, directed to the reaction of PhCHO producing a alcohol and an acid, which uses 0.1 M sodium hydroxide. This specific addition of sodium hydroxide clearly indicates that the temperatures contemplated in An cannot accomplish what Applicants have provided by their invention. Moreover, the addition of a basic catalyst such as sodium hydroxide is explicitly excluded from the pending claims.

Accordingly, An only discloses only that, at best, water at 300°C can be used as a medium for organic synthesis, but that this use does not allow one to avoid the addition of a basic catalyst to promote reaction. To the contrary, the present specification and examples described herein show exactly the opposite situation: that by proceeding according to the claims and in the absence of added basic catalysts, good reaction rates and yields are obtained when the medium is supercritical water or subcritical water of at least 350°C. Note for

example the extremely short reaction times of the present examples, and the very long time for the Cannizzaro reaction in Table 1 of An (sixty minutes, entry 36).

Accordingly, and in view of the several differences between An and the presently pending claims, Applicants submit that one of ordinary skill in the art would not be led to the invention as claimed from the disclosure in An. This is particularly true in view of the differences regarding at least the addition of a basic catalyst and the physical state of the aqueous medium. For these reasons, Applicants respectfully request the reconsideration and withdrawal of the outstanding rejections, and the passage of this case to Issue.¹

Respectfully submitted,

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¹In this regard, Applicants have addressed the outstanding rejection based on 35 U.S.C. 112 by limiting the claims to those reactions that proceed by basic catalysis. As noted throughout the specification, Applicants' discovery that the particular medium described herein supplies OH⁻ as a substitute for such basic catalysts represents a patentable invention.

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IN THE CLAIMS

Please amend Claims 1, 2, 5 and 6 as follows.

--1. (Amended) A method of non catalytic organic synthesis in a reaction that proceeds by basic catalysis, which comprises performing [an organic synthesis] said reaction [by utilizing supply of OH^- from water] in the absence of catalyst without addition of basic catalyst in supercritical water or subcritical water of at least 350°C , utilizing a supply of OH^- from said water as a substitute for said basic catalyst.

2. (Amended) A method of increasing the reaction rate of an organic synthesis reaction that proceeds by basic catalysis, which comprises performing the organic synthesis reaction [by utilizing supply of OH^- from water] in the absence of catalyst without addition of basic catalyst in supercritical water or subcritical water of at least 350°C , utilizing a supply of OH^- from said water as a substitute for said basic catalyst.

5. (Amended) The method according to Claim 3, wherein alcohol and carboxylic acid are generated from an aldehyde in the absence of catalyst without addition of the basic catalyst near the critical point of the supercritical water.

6. (Amended) The method according to Claim 4, wherein alcohol and carboxylic acid are generated from an aldehyde in the absence of catalyst without addition of the basic catalyst near the critical point of the supercritical water.--

□ Claims 7-18. (New)